

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

RECEIVED

NOV 7 2005

EUS LEGAL DEPT.

PCT

To:

Han, John C.  
HAN, John, C.  
Ericsson Inc.  
6300 Legacy  
MS EVW 2-C-2  
Plano, TX 75024  
ETATS-UNIS D'AMERIQUE

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

03.11.2005

Applicant's or agent's file reference  
P18073WO

## IMPORTANT NOTIFICATION

International application No.  
PCT/B2003/002510

International filing date (day/month/year)  
07.08.2003

Priority date (day/month/year)  
07.08.2003

Applicant

TELEFONAKTIEBOLAGET LM ERICSSON (PUBL) et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB601).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465



Authorized Officer

Benigar, M

Tel. +49 89 2399-2996



**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>P18073WO</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. <b>PCT/AB2003/002510</b>	International filing date (day/month/year) <b>07.08.2003</b>	Priority date (day/month/year) <b>07.08.2003</b>
International Patent Classification (IPC) or both national classification and IPC <b>H04Q734</b>		
Applicant <b>TELEFONAKTIEBOLAGET LM ERICSSON (PUBL) et al</b>		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 8 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand  <b>07.03.2005</b>	Date of completion of this report  <b>03.11.2005</b>	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  <b>Pasini, E</b>  Telephone No. +49 89 2399-6968 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB2003/002510

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-4, 6-16                      filed with telefax on 07.08.2003  
5, 5a                          received on 12.10.2005 with letter of 10.10.2005

**Claims, Numbers**

1-16                          received on 12.10.2005 with letter of 10.10.2005

**Drawings, Sheets**

1/6-6/6                      filed with telefax on 07.08.2003

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description,              pages:  
☐ the claims,                  Nos.:  
☐ the drawings,                sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IB2003/002510

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Cited Documents**

The following documents are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

**D1:** WO 01/95657 A2

**D2:** US 2002/0155825 A1

**D3:** WO 02/39673 A1

**D4:** Bilgic, Essigmann et Al. : "Quality of Service in General Packet Radio Service", 1999 IEEE

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**A. Novelty / Inventive Step:**

1. **Document D3** discloses (see in particular page 1, line 5 to page 3, line 21; page 4, lines 14-17; page 5, lines 17-24; page 6, lines 8-12; page 7, line 15 to page 11, line 10; page 16, lines 9-22; page 17, line 5 to page 18, line 2; page 19, line 8 to page 20 line 10; page 21, line 18 to page 22, line 11; page 23, lines 7-19, page 36, lines 1-6) according to the **essential features of claim 1**, a method of measuring (see in particular page 8, line 7: "measurements" and line 18: "gain measures") and analysing (see in particular page 9, line 17: "analysis") packet-switched traffic (see in particular page 3, line 3: "packet service") in a Universal Mobile Telecommunications System network having a mobile station linked to a base station through a radio channel (see in particular page 9, lines 3-4: "UMTS"), the base station being linked to a radio access network (see in particular page 9, line 3: "radio access network"), and the radio access network being linked to a support node in a packet core network (see in particular page 9, lines 3-4: "UMTS" and page 9, lines 16-21: "GGSN") wherein cell level location information of the mobile station is obtained in a node in the radio access network (see in particular page 9, lines 3-4: "radio access network...UMTS"; the availability of cell level location information of a mobile in a network element of the radio access network being **implicitly** included in radio access network according to the UMTS standard, see also PCT Guidelines 12.04), the method comprising transmitting user plane packets towards the packet core network (see in particular page 10, line 10: "packet flows" and page 8, line 26:

"mobile internet services" and page 9, lines 16-21), measuring the user data traffic at the packet core network level (see in particular page 9, lines 16-21: "monitoring...analysis", "place it near the GGSN") and determining end-to-end quality of service metrics (see in particular page 10, lines 8-12: "end-to-end QoS metrics") for the mobile station (see in particular page 8, line 23 to page 9, line 4: "subscriber", "mobile") by analyzing the user data traffic (see in particular page 10, line 10: "observation of packet flows") measured at the packet core network level (see in particular page 9, lines 16-21: "at...high aggregation points of the network...near the GGSN").

The subject-matter of **claim 1** differs from that disclosed in **D3** in the features of adding cell-level location information to user plane packet headers, measuring **also the cell-level location information and packet data protocol context information** at the packet core network level, determining the end-to-end QoS by analyzing **also the cell-level location and PDP context information** measured at the packet core network level.

The **problem** to be solved by the present invention can therefore be regarded as how to obtain a more accurate evaluation of the quality of service.

However, already starting from the disclosure of **D3** (see in particular page 2, line 22 to page 3, line 3; page 9, lines 7-10 and page 23, lines 7-10) the skilled person would know that, in order to more accurately evaluate the quality of service, additional subscriber information can be provided, measured and analysed.

Additionally, the provision of mobile subscriber's information, as location information based on a cell identification carried by means of user plane packet headers and of PDP context information, merely represents a minor technical detail which is, furthermore normally known in wireless communications, as shown e.g. in **D2** (see [0001]-[0030] and figure 1, with particular reference to [0024]-[0025]: "in every packet transmitted", "location information could be added", "header", [0008]: "on the basis of a cell identification"; [0017]: "location information e.g. cell" and [0017]: "operating state...PDP context") which relates to a similar mobile data services as in **D3**.

Consequently, merely modifying the method disclosed for a UMTS network in **D3**, in

order to obtain a more accurate evaluation of the quality of service, by defining the provision, measurement and analysis **also of additional information**, e.g. additional information consisting of cell based location and PDP context information according to the **same general principle** already known from **D2**, would merely represent an obvious implementation choice for the skilled person.

Therefore, the subject-matter of **claim 1** does not involve an inventive step (Article 33(3) PCT).

2. Similar consideration as made in paragraph A-1 are also applicable to independent **claim 14**, as its subject-matter corresponds to that of **claim 1** claimed with reference to a Universal Mobile Telecommunication System.

Furthermore document **D3** also explicitly discloses the details of a network monitoring device (page 9, line 18: "monitors"), the access network portion including nodes for transmitting data packets from the mobile stations towards the packet core network portion (page 9, line 3: "IP based radio access networks") and the monitoring device being placed at a point in the telecommunication network where the monitoring device measures information aggregated from a plurality of nodes (page 9, lines 16-21; page 17, line 10: "monitoring points...at junctures of high aggregation").

Therefore, the subject-matter of **claim 14** also does not involve an inventive step (Article 33(3) PCT).

3. Similar considerations as made in paragraphs A1-A2 above are also valid for independent **claim 15**, as its subject-matter corresponds substantially to that of **claim 1**, claimed with reference to a monitoring device.  
Additionally it shall be noted that a monitoring device (page 9, line 18: "monitors"), one measurement point at a level where information of a plurality of mobile stations (page 9, line 3: "radio access networks") is aggregated (page 9, line 16-21: "high aggregation point of the network") and computing means for analysing the aggregated information (page 5, lines 21-22: "perform more complex statistics") are explicitly disclosed in **D3**.

Therefore, the subject-matter of **claim 15** also does not involve an inventive step

(Article 33(3) PCT).

4. Dependent **claims 2-12 and 16** do not contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the Article 33(3) PCT in respect of **inventive step**, because they are either directly derivable from the cited documents or represent obvious design possibilities for a person skilled in the field mobile communications.

Reference is made to the already cited passages of documents **D3** (see in particular page 1, line 5 to page 3, line 21; page 4, lines 14-17; page 5, lines 17-24; page 6, lines 8-12; page 7, line 15 to page 11, line 10; page 16, lines 9-22; page 17, line 5 to page 18, line 2; page 19, line 8 to page 20 line 10; page 21, line 18 to page 22, line 11; page 23, lines 7-19, page 36, lines 1-6) and **D2** (see [0001]-[0030] and figure 1) and also to document **D4** (Abstract: "wireless Internet" and page 230, lines 46-52 of paragraph C on the right-hand column : "encryption security payload tunneled packets").

Additionally the following should be noted:

- a) **Claim 10:** The **principle** of adding the location information by modifying the header of a tunneled packet is already explicitly disclosed in **D2** (see in particular [0025]). Adding the **same** cell location information according to the **same principle** by modifying the header of packets which are tunneled according to other well-known protocols, e.g. according to the well-known GTP tunneling protocol of the GPRS, would, therefore, merely represent a straightforward implementation alternative for the skilled person.
- b) **Claim 11:** Encrypting the information sent over a wireless network is commonly known in the art, see for example **D4**. Consequently, merely defining the encryption of a particular information or of a particular field would simply represent a straightforward implementation detail for the skilled person, not adding anything of inventive significance to the subject-matter of the claims.
- c) **Claims 12-13 and 16 :** Measurements for a plurality of subscribers and interfaces or for an entire network are already derivable from **D3** (see in particular page 9, lines 16-21: "large number of users in parallel", "a large network", page 17, line 10 and figure 3), whereas the inclusion of location and PDP context information is normally known in the art, e.g. from **D2** (see paragraph A-1 above).



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/IB2003/002510

Therefore, dependent **claims 2 to 13 and 16** do not meet the requirements of the Article 33(3) PCT.

**B. Certain defects**

1. The independent claims are not in the correct two-part form recommended by Rule 6.3 (b) PCT, having a pre-characterizing portion which reflects the prior art of document **D3** (Rule 6.3(b) (I) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).